SEQUENCE LISTING

<110> McCarthy, Sean A.
Holtzman, Douglas A.
Goodearl, Andrew D.J.

<120> NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC AND OTHER USES

<130> 07334-325001

<150> US 09/128,709
<151> 1998-08-04

<150> US 60/054,645
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<150> US 09/130,491
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   Thr Arg Pro Ile Leu Val Ile His Asp Glu Gln Lys Gly Pro Glu
    1               5                  10                  15

gtg acc tcc aat gct gcc ctc act ctg cgg aac ttt tgc aac tgg cag        95
Val Thr Ser Asn Ala Ala Leu Thr Leu Arg Asn Phe Cys Asn Trp Gln
                20                  25                  30

aag cag cac aac cca ccc agt gac cgg gat gca gag cac tat gac aca       143
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Lys Gln His Asn Pro Pro Ser Asp Arg Asp Ala Glu His Tyr Asp Thr
             35                  40                  45

gca att ctt ttc acc aga cag gac ttg tgt ggg tcc cag aca tgt gat      191
Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Ser Gln Thr Cys Asp
         50                  55                  60

act ctt ggg atg gct gat gtt gga act gtg tgt gat ccg agc aga agc      239
Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ser Arg Ser
     65                  70                  75

tgc tcc gtc ata gaa gat gat ggt tta caa gct gcc ttc acc aca gcc      287
Cys Ser Val Ile Glu Asp Asp Gly Leu Gln Ala Ala Phe Thr Thr Ala
 80                  85                  90                  95

cat gaa tta ggc cac gtg ttt aac atg cca cat gat gat gca aag cag      335
His Glu Leu Gly His Val Phe Asn Met Pro His Asp Asp Ala Lys Gln
                100                 105                 110

tgt gcc agc ctt aat ggt gtg aac cag gat tcc cac atg atg gcg tca      383
Cys Ala Ser Leu Asn Gly Val Asn Gln Asp Ser His Met Met Ala Ser
            115                 120                 125

atg ctt tcc aac ctg gac cac agc cag cct tgg tct cct tgc agt gcc      431
Met Leu Ser Asn Leu Asp His Ser Gln Pro Trp Ser Pro Cys Ser Ala
        130                 135                 140

tac atg att aca tca ttt ctg gat aat ggt cat ggg gaa tgt ttg atg      479
Tyr Met Ile Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu Met
    145                 150                 155

gac aag cct cag aat ccc ata cag ctc cca ggc gat ctc cct ggc acc      527
Asp Lys Pro Gln Asn Pro Ile Gln Leu Pro Gly Asp Leu Pro Gly Thr
160                 165                 170                 175

tcg tac gat gcc aac cgg cag tgc cag ttt aca ttt ggg gag gac tcc      575
Ser Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Asp Ser
                180                 185                 190

aaa cac tgc ccc gat gca gcc agc aca tgt agc acc ttg tgg tgt acc      623
Lys His Cys Pro Asp Ala Ala Ser Thr Cys Ser Thr Leu Trp Cys Thr
            195                 200                 205

ggc acc tct ggt ggg gtg ctg gtg tgt caa acc aaa cac ttc ccg tgg      671
Gly Thr Ser Gly Gly Val Leu Val Cys Gln Thr Lys His Phe Pro Trp
        210                 215                 220

gcg gat ggc acc agc tgt gga gaa ggg aaa tgg tgt atc aac ggc aag      719
Ala Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Ile Asn Gly Lys
    225                 230                 235

tgt gtg aac aaa acc gac aga aag cat ttt gat acg cct ttt cat gga      767
Cys Val Asn Lys Thr Asp Arg Lys His Phe Asp Thr Pro Phe His Gly
240                 245                 250                 255

agc tgg gga atg tgg ggg cct tgg gga gac tgt tcg aga acg tgc ggt      815
Ser Trp Gly Met Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly
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                260                 265                 270

gga gga gtc cag tac acg atg agg gaa tgt gac aac cca gtc cca aag      863
Gly Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro Lys
            275                 280                 285

aat gga ggg aag tac tgt gaa ggc aaa cga gtg cgc tac aga tcc tgt      911
Asn Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser Cys
        290                 295                 300

aac ctt gag gac tgt cca gac aat aat gga aaa acc ttt aga gag gaa      959
Asn Leu Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu Glu
    305                 310                 315

caa tgt gaa gca cac aac gag ttt tca aaa gct tcc ttt ggg agt ggg     1007
Gln Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Ser Gly
320                 325                 330                 335

cct gcg gtg gaa tgg att ccc aag tac gct ggc gtc tca cca aag gac     1055
Pro Ala Val Glu Trp Ile Pro Lys Tyr Ala Gly Val Ser Pro Lys Asp
                340                 345                 350

agg tgc aag ctc atc tgc caa gcc aaa ggc att ggc tac ttc ttc gtt     1103
Arg Cys Lys Leu Ile Cys Gln Ala Lys Gly Ile Gly Tyr Phe Phe Val
            355                 360                 365

ttg cag ccc aag gtt gta gat ggt act cca tgt agc cca gat tcc acc     1151
Leu Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Thr
        370                 375                 380

tct gtc tgt gtg caa gga cag tgt gta aaa gct ggt tgt gat cgc atc     1199
Ser Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg Ile
    385                 390                 395

ata gac tcc aaa aag aag ttt gat aaa tgt ggt gtt tgc ggg gga aat     1247
Ile Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly Asn
400                 405                 410                 415

gga tct act tgt aaa aaa ata tca gga tca gtt act agt gca aaa cct     1295
Gly Ser Thr Cys Lys Lys Ile Ser Gly Ser Val Thr Ser Ala Lys Pro
                420                 425                 430

gga tat cat gat atc atc aca att cca act gga gcc acc aac atc gaa     1343
Gly Tyr His Asp Ile Ile Thr Ile Pro Thr Gly Ala Thr Asn Ile Glu
            435                 440                 445

gtg aaa cag cgg aac cag agg gga tcc agg aac aat ggc agc ttt ctt     1391
Val Lys Gln Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe Leu
        450                 455                 460

gcc atc aaa gct gct gat ggc aca tat att ctt aat ggt gac tac act     1439
Ala Ile Lys Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asp Tyr Thr
    465                 470                 475

ttg tcc acc tta gag caa gac att atg tac aaa ggt gtt gtc ttg agg     1487
Leu Ser Thr Leu Glu Gln Asp Ile Met Tyr Lys Gly Val Val Leu Arg
480                 485                 490                 495
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tac agc ggc tcc tct gcg gca ttg gaa aga att cgc agc ttt agc cct     1535
Tyr Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser Pro
                500                 505                 510

ctc aaa gag ccc ttg acc atc cag gtt ctt act gtg ggc aat gcc ctt     1583
Leu Lys Glu Pro Leu Thr Ile Gln Val Leu Thr Val Gly Asn Ala Leu
            515                 520                 525

cga cct aaa att aaa tac acc tac ttc gta aag aag aag aag gaa tct     1631
Arg Pro Lys Ile Lys Tyr Thr Tyr Phe Val Lys Lys Lys Lys Glu Ser
        530                 535                 540

ttc aat gct atc ccc act ttt tca gca tgg gtc att gaa gag tgg ggc     1679
Phe Asn Ala Ile Pro Thr Phe Ser Ala Trp Val Ile Glu Glu Trp Gly
    545                 550                 555

gaa tgt tct aag acc tgt ggg aag ggt tac aaa aaa aga agc ttg aag     1727
Glu Cys Ser Lys Thr Cys Gly Lys Gly Tyr Lys Lys Arg Ser Leu Lys
560                 565                 570                 575

tgt ctg tcc cat gat gga ggg gtg tta tct cat gag agc tgt gat cct     1775
Cys Leu Ser His Asp Gly Gly Val Leu Ser His Glu Ser Cys Asp Pro
                580                 585                 590

tta aag aaa cct aaa cat ttc ata gac ttt tgc aca atg gca gaa tgc     1823
Leu Lys Lys Pro Lys His Phe Ile Asp Phe Cys Thr Met Ala Glu Cys
            595                 600                 605

agt taagtggttt aagtggtgtt agctttgagg gcaaggcaaa gtgaggaagg          1876
Ser

gctggtgcag ggaaagcaag aaggctggag ggatccagcg tatcttgcca gtaaccagtg   1936
aggtgtatca gtaaggtggg attatggggg tagatagaaa aggagttgaa tcatcagagt   1996
aaactgccag ttgcaaattt gataggatag ttagtgagga ttattaacct ctgagcagtg   2056
atatagcata ataaagcccc gggcattatt attattattt cttttgttac atctattaca   2116
agtttagaaa aaacaaagca attgtcaaaa aaagttagaa ctattacaac ccctgtttcc   2176
tggtacttat caaatactta gtatcatggg ggttgggaaa tgaaaagtag gagaaaagtg   2236
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gaaaaaaagc agtgaagcat tacatgctgg taaaagctag aggagacaca atgagcttag   2596
tacctccaac ttcctttctt tcctaccatg taaccctgct ttcggaatat ggatgtaaag   2656
aagtaacttg tgtctcatga aaatcagtac aatcacacaa ggaggatgaa acgccggaac   2716
aaaaatgagg tgtgtagaac agggtcccac aggtttgggg acattgagat cacttgtctt   2776
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atcctggtga atgtctgttc agctcttctg tgagaatatg atttttcca tatgtatata    2896
gtaaaatatg ttactataaa ttacatgtac tttataagta ttggtttggg tgttccttcc   2956
aagaaggact atagttagta ataaatgcct ataataacat atttatttttt atacatttat  3016
ttctaatgaa aaaaactttt aaattatatc gcttttgtgg aagtgcatat aaaatagagt   3076
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<210> 2
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<212> PRT
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            20                  25                  30
Gln His Asn Pro Pro Ser Asp Arg Asp Ala Glu His Tyr Asp Thr Ala
        35                  40                  45
Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Ser Gln Thr Cys Asp Thr
    50                  55                  60
Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ser Arg Ser Cys
65                  70                  75                  80
Ser Val Ile Glu Asp Asp Gly Leu Gln Ala Ala Phe Thr Thr Ala His
                85                  90                  95
Glu Leu Gly His Val Phe Asn Met Pro His Asp Asp Ala Lys Gln Cys
            100                 105                 110
Ala Ser Leu Asn Gly Val Asn Gln Asp Ser His Met Met Ala Ser Met
        115                 120                 125
Leu Ser Asn Leu Asp His Ser Gln Pro Trp Ser Pro Cys Ser Ala Tyr
    130                 135                 140
Met Ile Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu Met Asp
145                 150                 155                 160
Lys Pro Gln Asn Pro Ile Gln Leu Pro Gly Asp Leu Pro Gly Thr Ser
                165                 170                 175
Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Asp Ser Lys
            180                 185                 190
His Cys Pro Asp Ala Ala Ser Thr Cys Ser Thr Leu Trp Cys Thr Gly
        195                 200                 205
Thr Ser Gly Gly Val Leu Val Cys Gln Thr Lys His Phe Pro Trp Ala
    210                 215                 220
Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Ile Asn Gly Lys Cys
225                 230                 235                 240
Val Asn Lys Thr Asp Arg Lys His Phe Asp Thr Pro Phe His Gly Ser
                245                 250                 255
Trp Gly Met Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly
            260                 265                 270
Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro Lys Asn
        275                 280                 285
Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser Cys Asn
    290                 295                 300
Leu Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu Glu Gln
305                 310                 315                 320
Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Ser Gly Pro
                325                 330                 335
Ala Val Glu Trp Ile Pro Lys Tyr Ala Gly Val Ser Pro Lys Asp Arg
            340                 345                 350
Cys Lys Leu Ile Cys Gln Ala Lys Gly Ile Gly Tyr Phe Phe Val Leu
        355                 360                 365
Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Thr Ser
    370                 375                 380
Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg Ile Ile
385                 390                 395                 400
Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly Asn Gly
                405                 410                 415
Ser Thr Cys Lys Lys Ile Ser Gly Ser Val Thr Ser Ala Lys Pro Gly
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            420                 425                 430
Tyr His Asp Ile Ile Thr Ile Pro Thr Gly Ala Thr Asn Ile Glu Val
        435                 440                 445
Lys Gln Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe Leu Ala
    450                 455                 460
Ile Lys Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asp Tyr Thr Leu
465                 470                 475                 480
Ser Thr Leu Glu Gln Asp Ile Met Tyr Lys Gly Val Val Leu Arg Tyr
                485                 490                 495
Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser Pro Leu
            500                 505                 510
Lys Glu Pro Leu Thr Ile Gln Val Leu Thr Val Gly Asn Ala Leu Arg
        515                 520                 525
Pro Lys Ile Lys Tyr Thr Tyr Phe Val Lys Lys Lys Lys Glu Ser Phe
    530                 535                 540
Asn Ala Ile Pro Thr Phe Ser Ala Trp Val Ile Glu Glu Trp Gly Glu
545                 550                 555                 560
Cys Ser Lys Thr Cys Gly Lys Gly Tyr Lys Lys Arg Ser Leu Lys Cys
                565                 570                 575
Leu Ser His Asp Gly Gly Val Leu Ser His Glu Ser Cys Asp Pro Leu
            580                 585                 590
Lys Lys Pro Lys His Phe Ile Asp Phe Cys Thr Met Ala Glu Cys Ser
        595                 600                 605
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<400> 3

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gccgcacccc aggcccccag aggccagtct gtttgcctcc caacgccatc tgacccaggt    120
gagcaagagg atg ctg gcg ggg ggc gtg agg agc atg ccc agc ccc ctc        169
           Met Leu Ala Gly Gly Val Arg Ser Met Pro Ser Pro Leu
             1               5                  10

ctg gcc tgc tgg cag ccc atc ctc ctg ctg gtg ctg ggc tca gtg ctg      217
Leu Ala Cys Trp Gln Pro Ile Leu Leu Leu Val Leu Gly Ser Val Leu
     15                  20                  25

tca ggc tcg gcc acg ggc tgc ccg ccc cgc tgc gag tgc tcc gcc cag      265
Ser Gly Ser Ala Thr Gly Cys Pro Pro Arg Cys Glu Cys Ser Ala Gln
 30                  35                  40                  45

gac cgc gct gtg ctg tgc cac cgc aag cgc ttt gtg gca gtc ccc gag      313
Asp Arg Ala Val Leu Cys His Arg Lys Arg Phe Val Ala Val Pro Glu
                 50                  55                  60

ggc atc ccc acc gag acg cgc ctg ctg gac cta ggc aag aac cgc atc      361
Gly Ile Pro Thr Glu Thr Arg Leu Leu Asp Leu Gly Lys Asn Arg Ile
            65                  70                  75

aaa acg ctc aac cag gac gag ttc gcc agc ttc ccg cac ctg gag gag      409
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Lys Thr Leu Asn Gln Asp Glu Phe Ala Ser Phe Pro His Leu Glu Glu
          80                  85                  90

ctg gag ctc aac gag aac atc gtg agc gcc gtg gag ccc ggc gcc ttc      457
Leu Glu Leu Asn Glu Asn Ile Val Ser Ala Val Glu Pro Gly Ala Phe
      95                 100                 105

aac aac ctc ttc aac ctc cgg acg ctg ggt ctc cgc agc aac cgc ctg      505
Asn Asn Leu Phe Asn Leu Arg Thr Leu Gly Leu Arg Ser Asn Arg Leu
110                 115                 120                 125

aag ctc atc ccg cta ggc gtc ttc act ggc ctc agc aac ctg acc aag      553
Lys Leu Ile Pro Leu Gly Val Phe Thr Gly Leu Ser Asn Leu Thr Lys
                130                 135                 140

ctg gac acg agg gag aac aag atc gtt atc cta ctg gac tac atg ttt      601
Leu Asp Thr Arg Glu Asn Lys Ile Val Ile Leu Leu Asp Tyr Met Phe
            145                 150                 155

cag gac ctg tac aac ctc aag tca ctg gag gtt ggc gac aat gac ctc      649
Gln Asp Leu Tyr Asn Leu Lys Ser Leu Glu Val Gly Asp Asn Asp Leu
        160                 165                 170

gtc tac atc tct cac cgc gcc ttc agc ggc ctc aac agc ctg gag cag      697
Val Tyr Ile Ser His Arg Ala Phe Ser Gly Leu Asn Ser Leu Glu Gln
    175                 180                 185

ctg act ctg gag aaa tgc aac ctg acc tcc atc ccc acc gag gcg ctg      745
Leu Thr Leu Glu Lys Cys Asn Leu Thr Ser Ile Pro Thr Glu Ala Leu
190                 195                 200                 205

tcc cac ctg cac ggc ctc atc gtc ctg agg ctc cgg cac ctc aac atc      793
Ser His Leu His Gly Leu Ile Val Leu Arg Leu Arg His Leu Asn Ile
                210                 215                 220

aat gcc atc cgg gac tac tcc ttc aag agg ctg tac cga ctc aag gtc      841
Asn Ala Ile Arg Asp Tyr Ser Phe Lys Arg Leu Tyr Arg Leu Lys Val
            225                 230                 235

ttg gag atc tcc cac tgg ccc tac ttg gac acc atg aca ccc aac tgc      889
Leu Glu Ile Ser His Trp Pro Tyr Leu Asp Thr Met Thr Pro Asn Cys
        240                 245                 250

ctc tac ggc ctc aac ctg acg tcc ctg tcc atc aca cac tgc aat ctg      937
Leu Tyr Gly Leu Asn Leu Thr Ser Leu Ser Ile Thr His Cys Asn Leu
    255                 260                 265

acc gct gtg ccc tac ctg gcc gtc cgc cac cta gtc tat ctc cgc ttc      985
Thr Ala Val Pro Tyr Leu Ala Val Arg His Leu Val Tyr Leu Arg Phe
270                 275                 280                 285

ctc aac ctc tcc tac aac ccc atc agc acc att gag ggc tcc atg ttg     1033
Leu Asn Leu Ser Tyr Asn Pro Ile Ser Thr Ile Glu Gly Ser Met Leu
                290                 295                 300

cat gag ctg ctc cgg ctg cag gag atc cag ctg gtg ggc ggg cag ctg     1081
His Glu Leu Leu Arg Leu Gln Glu Ile Gln Leu Val Gly Gly Gln Leu
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            305                 310                 315

gcc gtg gtg gag ccc tat gcc ttc cgc ggc ctc aac tac ctg cgc gtg     1129
Ala Val Val Glu Pro Tyr Ala Phe Arg Gly Leu Asn Tyr Leu Arg Val
        320                 325                 330

ctc aat gtc tct ggc aac cag ctg acc aca ctg gag gaa tca gtc ttc     1177
Leu Asn Val Ser Gly Asn Gln Leu Thr Thr Leu Glu Glu Ser Val Phe
    335                 340                 345

cac tcg gtg ggc aac ctg gag aca ctc atc ctg gac tcc aac ccg ctg     1225
His Ser Val Gly Asn Leu Glu Thr Leu Ile Leu Asp Ser Asn Pro Leu
350                 355                 360                 365

gcc tgc gac tgt cgg ctc ctg tgg gtg ttc cgg cgc cgc tgg cgg ctc     1273
Ala Cys Asp Cys Arg Leu Leu Trp Val Phe Arg Arg Arg Trp Arg Leu
                370                 375                 380

aac ttc aac cgg cag cag ccc acg tgc gcc acg ccc gag ttt gtc cag     1321
Asn Phe Asn Arg Gln Gln Pro Thr Cys Ala Thr Pro Glu Phe Val Gln
            385                 390                 395

ggc aag gag ttc aag gac ttc cct gat gtg cta ctg ccc aac tac ttc     1369
Gly Lys Glu Phe Lys Asp Phe Pro Asp Val Leu Leu Pro Asn Tyr Phe
        400                 405                 410

acc tgc cgc cgc gcc cgc atc cgg gac cgc aag gcc cag cag gtg ttt     1417
Thr Cys Arg Arg Ala Arg Ile Arg Asp Arg Lys Ala Gln Gln Val Phe
    415                 420                 425

gtg gac gag ggc cac acg gtg cag ttt gtg tgc cgg gcc gat ggc gac     1465
Val Asp Glu Gly His Thr Val Gln Phe Val Cys Arg Ala Asp Gly Asp
430                 435                 440                 445

ccg ccg ccc gcc atc ctc tgg ctc tca ccc cga aag cac ctg gtc tca     1513
Pro Pro Pro Ala Ile Leu Trp Leu Ser Pro Arg Lys His Leu Val Ser
                450                 455                 460

gcc aag agc aat ggg cgg ctc aca gtc ttc cct gat ggc acg ctg gag     1561
Ala Lys Ser Asn Gly Arg Leu Thr Val Phe Pro Asp Gly Thr Leu Glu
            465                 470                 475

gtg cgc tac gcc cag gta cag gac aac ggc acg tac ctg tgc atc gcg     1609
Val Arg Tyr Ala Gln Val Gln Asp Asn Gly Thr Tyr Leu Cys Ile Ala
        480                 485                 490

gcc aac gcg ggc ggc aac gac tcc atg ccc gcc cac ctg cat gtg cgc     1657
Ala Asn Ala Gly Gly Asn Asp Ser Met Pro Ala His Leu His Val Arg
    495                 500                 505

agc tac tcg ccc gac tgg ccc cat cag ccc aac aag acc ttc gct ttc     1705
Ser Tyr Ser Pro Asp Trp Pro His Gln Pro Asn Lys Thr Phe Ala Phe
510                 515                 520                 525

atc tcc aac cag ccg ggc gag gga gag gcc aac agc acc cgc gcc act     1753
Ile Ser Asn Gln Pro Gly Glu Gly Glu Ala Asn Ser Thr Arg Ala Thr
                530                 535                 540
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gtg cct ttc ccc ttc gac atc aag acc ctc atc atc gcc acc acc atg     1801
Val Pro Phe Pro Phe Asp Ile Lys Thr Leu Ile Ile Ala Thr Thr Met
            545                 550                 555

ggc ttc atc tct ttc ctg ggc gtc gtc ctc ttc tgc ctg gtg ctg ctg     1849
Gly Phe Ile Ser Phe Leu Gly Val Val Leu Phe Cys Leu Val Leu Leu
        560                 565                 570

ttt ctc tgg agc cgg ggc aag ggc aac aca aag cac aac atc gag atc     1897
Phe Leu Trp Ser Arg Gly Lys Gly Asn Thr Lys His Asn Ile Glu Ile
    575                 580                 585

gag tat gtg ccc cga aag tcg gac gca ggc atc agc tcc gcc gac gcg     1945
Glu Tyr Val Pro Arg Lys Ser Asp Ala Gly Ile Ser Ser Ala Asp Ala
590                 595                 600                 605

ccc cgc aag ttc aac atg aag atg ata tgaggccggg gcgggggca           1992
Pro Arg Lys Phe Asn Met Lys Met Ile
                610

gggacccccg ggcggccggg caggggaagg ggcctggccg ccacctgctc actctccagt   2052
ccttcccacc tcctccctac ccttctacac acgttctctt tctcccctcc cgcctccgtc   2112
ccctgctgcc ccccgccagc cctcaccacc tgccctcctt ctaccaggac ctcagaagcc   2172
cagacctggg gaccccacct acacaggggc attgacagac tggagtttaa agccgacgaa   2232
ccgacacgcg gcagagtcaa taattcaata aaaaagttac gaactttctc tgtaacttgg   2292
gtttcaataa ttatggattt ttatgaaaac ttgaaataat aaaaaaaaaa aaaaaaaag    2351
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<210> 4
<211> 614
<212> PRT
<213> Homo sapiens

<400> 4

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Met Leu Ala Gly Gly Val Arg Ser Met Pro Ser Pro Leu Leu Ala Cys
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Trp Gln Pro Ile Leu Leu Leu Val Leu Gly Ser Val Leu Ser Gly Ser
            20                  25                  30
Ala Thr Gly Cys Pro Pro Arg Cys Glu Cys Ser Ala Gln Asp Arg Ala
        35                  40                  45
Val Leu Cys His Arg Lys Arg Phe Val Ala Val Pro Glu Gly Ile Pro
    50                  55                  60
Thr Glu Thr Arg Leu Leu Asp Leu Gly Lys Asn Arg Ile Lys Thr Leu
65                  70                  75                  80
Asn Gln Asp Glu Phe Ala Ser Phe Pro His Leu Glu Glu Leu Glu Leu
                85                  90                  95
Asn Glu Asn Ile Val Ser Ala Val Glu Pro Gly Ala Phe Asn Asn Leu
            100                 105                 110
Phe Asn Leu Arg Thr Leu Gly Leu Arg Ser Asn Arg Leu Lys Leu Ile
        115                 120                 125
Pro Leu Gly Val Phe Thr Gly Leu Ser Asn Leu Thr Lys Leu Asp Thr
    130                 135                 140
Arg Glu Asn Lys Ile Val Ile Leu Leu Asp Tyr Met Phe Gln Asp Leu
145                 150                 155                 160
Tyr Asn Leu Lys Ser Leu Glu Val Gly Asp Asn Asp Leu Val Tyr Ile
                165                 170                 175
Ser His Arg Ala Phe Ser Gly Leu Asn Ser Leu Glu Gln Leu Thr Leu
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```
            180                 185                 190
Glu Lys Cys Asn Leu Thr Ser Ile Pro Thr Glu Ala Leu Ser His Leu
        195                 200                 205
His Gly Leu Ile Val Leu Arg Leu Arg His Leu Asn Ile Asn Ala Ile
    210                 215                 220
Arg Asp Tyr Ser Phe Lys Arg Leu Tyr Arg Leu Lys Val Leu Glu Ile
225                 230                 235                 240
Ser His Trp Pro Tyr Leu Asp Thr Met Thr Pro Asn Cys Leu Tyr Gly
                245                 250                 255
Leu Asn Leu Thr Ser Leu Ser Ile Thr His Cys Asn Leu Thr Ala Val
            260                 265                 270
Pro Tyr Leu Ala Val Arg His Leu Val Tyr Leu Arg Phe Leu Asn Leu
        275                 280                 285
Ser Tyr Asn Pro Ile Ser Thr Ile Glu Gly Ser Met Leu His Glu Leu
    290                 295                 300
Leu Arg Leu Gln Glu Ile Gln Leu Val Gly Gly Gln Leu Ala Val Val
305                 310                 315                 320
Glu Pro Tyr Ala Phe Arg Gly Leu Asn Tyr Leu Arg Val Leu Asn Val
                325                 330                 335
Ser Gly Asn Gln Leu Thr Thr Leu Glu Glu Ser Val Phe His Ser Val
            340                 345                 350
Gly Asn Leu Glu Thr Leu Ile Leu Asp Ser Asn Pro Leu Ala Cys Asp
        355                 360                 365
Cys Arg Leu Leu Trp Val Phe Arg Arg Arg Trp Arg Leu Asn Phe Asn
    370                 375                 380
Arg Gln Gln Pro Thr Cys Ala Thr Pro Glu Phe Val Gln Gly Lys Glu
385                 390                 395                 400
Phe Lys Asp Phe Pro Asp Val Leu Leu Pro Asn Tyr Phe Thr Cys Arg
                405                 410                 415
Arg Ala Arg Ile Arg Asp Arg Lys Ala Gln Gln Val Phe Val Asp Glu
            420                 425                 430
Gly His Thr Val Gln Phe Val Cys Arg Ala Asp Gly Asp Pro Pro Pro
        435                 440                 445
Ala Ile Leu Trp Leu Ser Pro Arg Lys His Leu Val Ser Ala Lys Ser
    450                 455                 460
Asn Gly Arg Leu Thr Val Phe Pro Asp Gly Thr Leu Glu Val Arg Tyr
465                 470                 475                 480
Ala Gln Val Gln Asp Asn Gly Thr Tyr Leu Cys Ile Ala Ala Asn Ala
                485                 490                 495
Gly Gly Asn Asp Ser Met Pro Ala His Leu His Val Arg Ser Tyr Ser
            500                 505                 510
Pro Asp Trp Pro His Gln Pro Asn Lys Thr Phe Ala Phe Ile Ser Asn
        515                 520                 525
Gln Pro Gly Glu Gly Glu Ala Asn Ser Thr Arg Ala Thr Val Pro Phe
    530                 535                 540
Pro Phe Asp Ile Lys Thr Leu Ile Ile Ala Thr Thr Met Gly Phe Ile
545                 550                 555                 560
Ser Phe Leu Gly Val Val Leu Phe Cys Leu Val Leu Leu Phe Leu Trp
                565                 570                 575
Ser Arg Gly Lys Gly Asn Thr Lys His Asn Ile Glu Ile Glu Tyr Val
            580                 585                 590
Pro Arg Lys Ser Asp Ala Gly Ile Ser Ser Ala Asp Ala Pro Arg Lys
        595                 600                 605
Phe Asn Met Lys Met Ile
    610
```

<210> 5

<211> 979
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (58)...(837)

<400> 5
gaattcggca cgaggccagc cagtccgccs gymcgrrgcc cggctcgctg gggcagc atg 60
Met
1

gcg ggg tcg ccg ctg ctc tgg ggg ccg cgg gcc ggg ggc gtc ggc ctt 108
Ala Gly Ser Pro Leu Leu Trp Gly Pro Arg Ala Gly Gly Val Gly Leu
5 10 15

ttg gtg ctg ctg ctg ctc ggc ctg ttt cgg ccg ccc ccc gcg ctc tgc 156
Leu Val Leu Leu Leu Leu Gly Leu Phe Arg Pro Pro Pro Ala Leu Cys
20 25 30

gcg cgg ccg gta aag gag ccc cgc ggc cta agc gca gcg tct ccg ccc 204
Ala Arg Pro Val Lys Glu Pro Arg Gly Leu Ser Ala Ala Ser Pro Pro
35 40 45

ttg gct gag act ggc gct cct cgc cgc ttc cgg cgg tca gtg ccc cga 252
Leu Ala Glu Thr Gly Ala Pro Arg Arg Phe Arg Arg Ser Val Pro Arg
50 55 60 65

ggt gag gcg gcg ggg gcg gtg cag gag ctg gcg cgg gcg ctg gcg cat 300
Gly Glu Ala Ala Gly Ala Val Gln Glu Leu Ala Arg Ala Leu Ala His
70 75 80

ctg ctg gag gcc gaa cgt cag gag cgg gcg cgg gcc gag gcg cag gag 348
Leu Leu Glu Ala Glu Arg Gln Glu Arg Ala Arg Ala Glu Ala Gln Glu
85 90 95

gct gag gat cag cag gcg cgc gtc ctg gcg cag ctg ctg cgc gtc tgg 396
Ala Glu Asp Gln Gln Ala Arg Val Leu Ala Gln Leu Leu Arg Val Trp
100 105 110

ggc gcc ccc cgc aac tct gat ccg gct ctg ggc ttg gac gac gac ccc 444
Gly Ala Pro Arg Asn Ser Asp Pro Ala Leu Gly Leu Asp Asp Asp Pro
115 120 125

gac gcg cct gca gcg cag ctc gct cgc gct ctg ctc cgc gcc cgc ctt 492
Asp Ala Pro Ala Ala Gln Leu Ala Arg Ala Leu Leu Arg Ala Arg Leu
130 135 140 145

gac cct gcc gcc cta gca gcc cag ctt gtc ccc gcg ccc gtc ccc gcc 540
Asp Pro Ala Ala Leu Ala Ala Gln Leu Val Pro Ala Pro Val Pro Ala
150 155 160

gcg gcg ctc cga ccc cgg ccc ccg gtc tac gac gac ggc ccc gcg ggc 588
Ala Ala Leu Arg Pro Arg Pro Pro Val Tyr Asp Asp Gly Pro Ala Gly
165 170 175

```
ccg gat gct gag gag gca ggc gac gag aca ccc gac gtg gac ccc gag      636
Pro Asp Ala Glu Glu Ala Gly Asp Glu Thr Pro Asp Val Asp Pro Glu
        180                 185                 190

ctg ttg agg tac ttg ctg gga cgg att ctt gcg gga agc gcg gac tcc      684
Leu Leu Arg Tyr Leu Leu Gly Arg Ile Leu Ala Gly Ser Ala Asp Ser
    195                 200                 205

gag ggg gtg gca gcc ccg cgc cgc ctc cgc cgt gcc gcc gac cac gat      732
Glu Gly Val Ala Ala Pro Arg Arg Leu Arg Arg Ala Ala Asp His Asp
210                 215                 220                 225

gtg ggc tct gag ctg ccc cct gag ggc gtg ctg ggg gcg ctg ctg cgt      780
Val Gly Ser Glu Leu Pro Pro Glu Gly Val Leu Gly Ala Leu Leu Arg
                230                 235                 240

gtg aaa cgc cta gag acc ccg gcg ccc cag gtg cct gca cgc cgc ctc      828
Val Lys Arg Leu Glu Thr Pro Ala Pro Gln Val Pro Ala Arg Arg Leu
            245                 250                 255

ttg cca ccc tgagcactgc ccggatcccg tgcaccctgg gacccagaag             877
Leu Pro Pro
        260

tgcccccgcc atcccgccac caggactgct ccccgccagc acgtccagag caacttaccc    937
cggccagcca gccctctcac ccgaggatcc ctacccccctg gc                      979

<210> 6
<211> 260
<212> PRT
<213> Homo sapiens

<400> 6
Met Ala Gly Ser Pro Leu Leu Trp Gly Pro Arg Ala Gly Gly Val Gly
 1               5                  10                  15
Leu Leu Val Leu Leu Leu Leu Gly Leu Phe Arg Pro Pro Pro Ala Leu
            20                  25                  30
Cys Ala Arg Pro Val Lys Glu Pro Arg Gly Leu Ser Ala Ala Ser Pro
        35                  40                  45
Pro Leu Ala Glu Thr Gly Ala Pro Arg Arg Phe Arg Arg Ser Val Pro
    50                  55                  60
Arg Gly Glu Ala Ala Gly Ala Val Gln Glu Leu Ala Arg Ala Leu Ala
65                  70                  75                  80
His Leu Leu Glu Ala Glu Arg Gln Glu Arg Ala Arg Ala Glu Ala Gln
                85                  90                  95
Glu Ala Glu Asp Gln Gln Ala Arg Val Leu Ala Gln Leu Leu Arg Val
            100                 105                 110
Trp Gly Ala Pro Arg Asn Ser Asp Pro Ala Leu Gly Leu Asp Asp Asp
        115                 120                 125
Pro Asp Ala Pro Ala Ala Gln Leu Ala Arg Ala Leu Leu Arg Ala Arg
    130                 135                 140
Leu Asp Pro Ala Ala Leu Ala Ala Gln Leu Val Pro Ala Pro Val Pro
145                 150                 155                 160
Ala Ala Ala Leu Arg Pro Arg Pro Pro Val Tyr Asp Asp Gly Pro Ala
                165                 170                 175
Gly Pro Asp Ala Glu Glu Ala Gly Asp Glu Thr Pro Asp Val Asp Pro
            180                 185                 190
```

```
Glu Leu Leu Arg Tyr Leu Leu Gly Arg Ile Leu Ala Gly Ser Ala Asp
        195                 200                 205
Ser Glu Gly Val Ala Ala Pro Arg Arg Leu Arg Arg Ala Ala Asp His
    210                 215                 220
Asp Val Gly Ser Glu Leu Pro Pro Glu Gly Val Leu Gly Ala Leu Leu
225                 230                 235                 240
Arg Val Lys Arg Leu Glu Thr Pro Ala Pro Gln Val Pro Ala Arg Arg
                245                 250                 255
Leu Leu Pro Pro
            260
```

<210> 7
<211> 714
<212> PRT
<213> Mus musculus

<400> 7

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Met Ala Arg Leu Ser Thr Gly Lys Ala Ala Cys Gln Val Val Leu Gly
 1               5                  10                  15
Leu Leu Ile Thr Ser Leu Thr Glu Ser Ser Ile Leu Thr Ser Glu Cys
            20                  25                  30
Pro Gln Leu Cys Val Cys Glu Ile Arg Pro Trp Phe Thr Pro Gln Ser
        35                  40                  45
Thr Tyr Arg Glu Ala Thr Thr Val Asp Cys Asn Asp Leu Arg Leu Thr
    50                  55                  60
Arg Ile Pro Gly Asn Leu Ser Ser Asp Thr Gln Val Leu Leu Leu Gln
65                  70                  75                  80
Ser Asn Asn Ile Ala Lys Thr Val Asp Glu Leu Gln Gln Leu Phe Asn
                85                  90                  95
Leu Thr Glu Leu Asp Phe Ser Gln Asn Asn Phe Thr Asn Ile Lys Glu
            100                 105                 110
Val Gly Leu Ala Asn Leu Thr Gln Leu Thr Thr Leu His Leu Glu Glu
        115                 120                 125
Asn Gln Ile Ser Glu Met Thr Asp Tyr Cys Leu Gln Asp Leu Ser Asn
    130                 135                 140
Leu Gln Glu Leu Tyr Ile Asn His Asn Gln Ile Ser Thr Ile Ser Ala
145                 150                 155                 160
Asn Ala Phe Ser Gly Leu Lys Asn Leu Leu Arg Leu His Leu Asn Ser
                165                 170                 175
Asn Lys Leu Lys Val Ile Asp Ser Arg Trp Phe Asp Ser Thr Pro Asn
            180                 185                 190
Leu Glu Ile Leu Met Ile Gly Glu Asn Pro Val Ile Gly Ile Leu Asp
        195                 200                 205
Met Asn Phe Arg Pro Leu Ser Asn Leu Arg Ser Leu Val Leu Ala Gly
    210                 215                 220
Met Tyr Leu Thr Asp Val Pro Gly Asn Ala Leu Val Gly Leu Asp Ser
225                 230                 235                 240
Leu Glu Ser Leu Ser Phe Tyr Asp Asn Lys Leu Ile Lys Val Pro Gln
                245                 250                 255
Leu Ala Leu Gln Lys Val Pro Asn Leu Lys Phe Leu Asp Leu Asn Lys
            260                 265                 270
Asn Pro Ile His Lys Ile Gln Glu Gly Asp Phe Lys Asn Met Leu Arg
        275                 280                 285
Leu Lys Glu Leu Gly Ile Asn Asn Met Gly Glu Leu Val Ser Val Asp
    290                 295                 300
Arg Tyr Ala Leu Asp Asn Leu Pro Glu Leu Thr Lys Leu Glu Ala Thr
305                 310                 315                 320
```

```
Asn Asn Pro Lys Leu Ser Tyr Ile His Arg Leu Ala Phe Arg Ser Val
                325                 330                 335
Pro Ala Leu Glu Ser Leu Met Leu Asn Asn Asn Ala Leu Asn Ala Val
            340                 345                 350
Tyr Gln Lys Thr Val Glu Ser Leu Pro Asn Leu Arg Glu Ile Ser Ile
        355                 360                 365
His Ser Asn Pro Leu Arg Cys Asp Cys Val Ile His Trp Ile Asn Ser
    370                 375                 380
Asn Lys Thr Asn Ile Arg Phe Met Glu Pro Leu Ser Met Phe Cys Ala
385                 390                 395                 400
Met Pro Pro Glu Tyr Arg Gly Gln Gln Val Lys Glu Val Leu Ile Gln
                405                 410                 415
Asp Ser Ser Glu Gln Cys Leu Pro Met Ile Ser His Asp Thr Phe Pro
            420                 425                 430
Asn His Leu Asn Met Asp Ile Gly Thr Thr Leu Phe Leu Asp Cys Arg
        435                 440                 445
Ala Met Ala Glu Pro Glu Pro Glu Ile Tyr Trp Val Thr Pro Ile Gly
    450                 455                 460
Asn Lys Ile Thr Val Glu Thr Leu Ser Asp Lys Tyr Lys Leu Ser Ser
465                 470                 475                 480
Glu Gly Thr Leu Glu Ile Ala Asn Ile Gln Ile Glu Asp Ser Gly Arg
                485                 490                 495
Tyr Thr Cys Val Ala Gln Asn Val Gln Gly Ala Asp Thr Arg Val Ala
            500                 505                 510
Thr Ile Lys Val Asn Gly Thr Leu Leu Asp Gly Ala Gln Val Leu Lys
        515                 520                 525
Ile Tyr Val Lys Gln Thr Glu Ser His Ser Ile Leu Val Ser Trp Lys
    530                 535                 540
Val Asn Ser Asn Val Met Thr Ser Asn Leu Lys Trp Ser Ser Ala Thr
545                 550                 555                 560
Met Lys Ile Asp Asn Pro His Ile Thr Tyr Thr Ala Arg Val Pro Val
                565                 570                 575
Asp Val His Glu Tyr Asn Leu Thr His Leu Gln Pro Ser Thr Asp Tyr
            580                 585                 590
Glu Val Cys Leu Thr Val Ser Asn Ile His Gln Gln Thr Gln Lys Ser
        595                 600                 605
Cys Val Asn Val Thr Thr Lys Thr Ala Ala Phe Ala Leu Asp Ile Ser
    610                 615                 620
Asp His Glu Thr Ser Thr Ala Leu Ala Ala Val Met Gly Ser Met Phe
625                 630                 635                 640
Ala Val Ile Ser Leu Ala Ser Ile Ala Ile Tyr Ile Ala Lys Arg Phe
                645                 650                 655
Lys Arg Lys Asn Tyr His His Ser Leu Lys Lys Tyr Met Gln Lys Thr
            660                 665                 670
Ser Ser Ile Pro Leu Asn Glu Leu Tyr Pro Pro Leu Ile Asn Leu Trp
        675                 680                 685
Glu Ala Asp Ser Asp Lys Asp Lys Asp Gly Ser Ala Asp Thr Lys Pro
    690                 695                 700
Thr Gln Val Asp Thr Ser Arg Ser Tyr Tyr
705                 710
```

<210> 8
<211> 608
<212> PRT
<213> Mus musculus

<400> 8

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Thr Arg Pro Ile Leu Val Ile His Asp Glu Gln Lys Gly Pro Glu Val
 1               5                  10                  15
Thr Ser Asn Ala Ala Leu Thr Leu Arg Asn Phe Cys Asn Trp Gln Lys
            20                  25                  30
Gln His Asn Pro Pro Ser Asp Arg Asp Ala Glu His Tyr Asp Thr Ala
        35                  40                  45
Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Ser Gln Thr Cys Asp Thr
    50                  55                  60
Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ser Arg Ser Cys
65                  70                  75                  80
Ser Val Ile Glu Asp Asp Gly Leu Gln Ala Ala Phe Thr Thr Ala His
                85                  90                  95
Glu Leu Gly His Val Phe Asn Met Pro His Asp Asp Ala Lys Gln Cys
            100                 105                 110
Ala Ser Leu Asn Gly Val Asn Gln Asp Ser His Met Met Ala Ser Met
        115                 120                 125
Leu Ser Asn Leu Asp His Ser Gln Pro Trp Ser Pro Cys Ser Ala Tyr
    130                 135                 140
Met Ile Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu Met Asp
145                 150                 155                 160
Lys Pro Gln Asn Pro Ile Gln Leu Pro Gly Asp Leu Pro Gly Thr Ser
                165                 170                 175
Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Asp Ser Lys
            180                 185                 190
His Cys Pro Asp Ala Ala Ser Thr Cys Ser Thr Leu Trp Cys Thr Gly
        195                 200                 205
Thr Ser Gly Gly Val Leu Val Cys Gln Thr Lys His Phe Pro Trp Ala
    210                 215                 220
Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Ile Asn Gly Lys Cys
225                 230                 235                 240
Val Asn Lys Thr Asp Arg Lys His Phe Asp Thr Pro Phe His Gly Ser
                245                 250                 255
Trp Gly Met Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly
            260                 265                 270
Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro Lys Asn
        275                 280                 285
Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser Cys Asn
    290                 295                 300
Leu Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu Glu Gln
305                 310                 315                 320
Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Ser Gly Pro
                325                 330                 335
Ala Val Glu Trp Ile Pro Lys Tyr Ala Gly Val Ser Pro Lys Asp Arg
            340                 345                 350
Cys Lys Leu Ile Cys Gln Ala Lys Gly Ile Gly Tyr Phe Phe Val Leu
        355                 360                 365
Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Thr Ser
    370                 375                 380
Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg Ile Ile
385                 390                 395                 400
Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly Asn Gly
                405                 410                 415
Ser Thr Cys Lys Lys Ile Ser Gly Ser Val Thr Ser Ala Lys Pro Gly
            420                 425                 430
Tyr His Asp Ile Ile Thr Ile Pro Ile Gly Ala Thr Asn Ile Glu Val
        435                 440                 445
Lys Gln Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe Leu Ala
```

```
    450                 455                 460
Ile Lys Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asp Tyr Thr Leu
465                 470                 475                 480
Ser Thr Leu Glu Gln Asp Ile Met Tyr Lys Gly Val Val Leu Arg Tyr
                485                 490                 495
Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser Pro Leu
            500                 505                 510
Lys Glu Pro Leu Thr Ile Gln Val Leu Thr Val Gly Asn Ala Leu Arg
        515                 520                 525
Pro Lys Ile Lys Tyr Thr Tyr Phe Val Lys Lys Lys Lys Glu Ser Phe
    530                 535                 540
Asn Ala Ile Pro Thr Phe Ser Ala Trp Val Ile Glu Glu Trp Gly Glu
545                 550                 555                 560
Cys Ser Lys Thr Cys Gly Lys Gly Tyr Lys Lys Arg Ser Leu Lys Cys
                565                 570                 575
Leu Ser His Asp Gly Gly Val Leu Ser His Glu Ser Cys Asp Pro Leu
            580                 585                 590
Lys Lys Pro Lys His Phe Ile Asp Phe Cys Thr Met Ala Glu Cys Ser
        595                 600                 605
```

<210> 9
<211> 3145
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (9)...(1562)

<400> 9

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gtgcctac atg gtc acg tcc ttc cta gat aat gga cac ggg gaa tgt ttg      50
         Met Val Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu
          1               5                  10

atg gac aag ccc cag aat cca atc aag ctc cct tct gat ctt ccc ggt      98
Met Asp Lys Pro Gln Asn Pro Ile Lys Leu Pro Ser Asp Leu Pro Gly
 15                  20                  25                  30

acc ttg tac gat gcc aac cgc cag tgt cag ttt aca ttc gga gag gaa     146
Thr Leu Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Glu
                 35                  40                  45

tcc aag cac tgc cct gat gca gcc agc aca tgt act acc ctg tgg tgc     194
Ser Lys His Cys Pro Asp Ala Ala Ser Thr Cys Thr Thr Leu Trp Cys
             50                  55                  60

act ggc acc tcc ggt ggc tta ctg gtg tgc caa aca aaa cac ttc cct     242
Thr Gly Thr Ser Gly Gly Leu Leu Val Cys Gln Thr Lys His Phe Pro
         65                  70                  75

tgg gca gat ggc acc agc tgt gga gaa ggg aag tgg tgt gtc agt ggc     290
Trp Ala Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Val Ser Gly
     80                  85                  90

aag tgc gtg aac aag aca gac atg aag cat ttt gct act cct gtt cat     338
Lys Cys Val Asn Lys Thr Asp Met Lys His Phe Ala Thr Pro Val His
 95                  100                 105                 110
```

```
gga agc tgg gga cca tgg gga ccg tgg gga gac tgc tca aga acc tgt      386
Gly Ser Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys
                115                 120                 125

ggt ggt gga gtt caa tac aca atg aga gaa tgt gac aac cca gtc cca      434
Gly Gly Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro
            130                 135                 140

aag aac gga ggg aag tac tgt gaa ggc aaa cga gtc cgc tac agg tcc      482
Lys Asn Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser
        145                 150                 155

tgt aac atc gag gac tgt cca gac aat aac gga aaa acg ttc aga gag      530
Cys Asn Ile Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu
    160                 165                 170

gag cag tgc gag gcg cac aat gag ttt tcc aaa gct tcc ttt ggg aat      578
Glu Gln Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Asn
175                 180                 185                 190

gag ccc act gta gag tgg aca ccc aag tac gcc ggc gtc tcg cca aag      626
Glu Pro Thr Val Glu Trp Thr Pro Lys Tyr Ala Gly Val Ser Pro Lys
                195                 200                 205

gac agg tgc aag ctc acc tgt gaa gcc aaa ggc att ggc tac ttt ttc      674
Asp Arg Cys Lys Leu Thr Cys Glu Ala Lys Gly Ile Gly Tyr Phe Phe
            210                 215                 220

gtc tta cag ccc aag gtt gta gat ggc act ccc tgt agt cca gac tct      722
Val Leu Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser
        225                 230                 235

acc tct gtc tgt gtg caa ggg cag tgt gtg aaa gct ggc tgt gat cgc      770
Thr Ser Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg
    240                 245                 250

atc ata gac tcc aaa aag aag ttt gat aag tgt ggc gtt tgt gga gga      818
Ile Ile Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly
255                 260                 265                 270

aac ggt tcc aca tgc aag aag atg tca gga ata gtc act agt aca aga      866
Asn Gly Ser Thr Cys Lys Lys Met Ser Gly Ile Val Thr Ser Thr Arg
                275                 280                 285

cct ggg tat cat gac att gtc aca att cct gct gga gcc acc aac att      914
Pro Gly Tyr His Asp Ile Val Thr Ile Pro Ala Gly Ala Thr Asn Ile
            290                 295                 300

gaa gtg aaa cat cgg aat caa agg ggg tcc aga aac aat ggc agc ttt      962
Glu Val Lys His Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe
        305                 310                 315

ctg gct att aga gcc gct gat ggt acc tat att ctg aat gga aac ttc     1010
Leu Ala Ile Arg Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asn Phe
    320                 325                 330
```

```
act ctg tcc aca cta gag caa gac ctc acc tac aaa ggt act gtc tta     1058
Thr Leu Ser Thr Leu Glu Gln Asp Leu Thr Tyr Lys Gly Thr Val Leu
335                 340                 345                 350

agg tac agt ggt tcc tcg gct gcg ctg gaa aga atc cgc agc ttt agt     1106
Arg Tyr Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser
                355                 360                 365

cca ctc aaa gaa ccc tta acc atc cag gtt ctt atg gta ggc cat gct     1154
Pro Leu Lys Glu Pro Leu Thr Ile Gln Val Leu Met Val Gly His Ala
            370                 375                 380

ctc cga ccc aaa att aaa ttc acc tac ttt atg aag aag aag aca gag     1202
Leu Arg Pro Lys Ile Lys Phe Thr Tyr Phe Met Lys Lys Lys Thr Glu
        385                 390                 395

tca ttc aac gcc att ccc aca ttt tct gag tgg gtg att gaa gag tgg     1250
Ser Phe Asn Ala Ile Pro Thr Phe Ser Glu Trp Val Ile Glu Glu Trp
    400                 405                 410

ggg gag tgc tcc aag aca tgc ggc tca ggt tgg cag aga aga gta gtg     1298
Gly Glu Cys Ser Lys Thr Cys Gly Ser Gly Trp Gln Arg Arg Val Val
415                 420                 425                 430

cag tgc aga gac att aac gga cac cct gct tcc gaa tgt gca aag gaa     1346
Gln Cys Arg Asp Ile Asn Gly His Pro Ala Ser Glu Cys Ala Lys Glu
                435                 440                 445

gtg aag cca gcc agt acc aga cct tgt gca gac ctt cct tgc cca cac     1394
Val Lys Pro Ala Ser Thr Arg Pro Cys Ala Asp Leu Pro Cys Pro His
            450                 455                 460

tgg cag gtg ggg gat tgg tca cca tgt tcc aaa act tgc ggg aag ggt     1442
Trp Gln Val Gly Asp Trp Ser Pro Cys Ser Lys Thr Cys Gly Lys Gly
        465                 470                 475

tac aag aag aga acc ttg aaa tgt gtg tcc cac gat ggg ggc gtg tta     1490
Tyr Lys Lys Arg Thr Leu Lys Cys Val Ser His Asp Gly Gly Val Leu
    480                 485                 490

tca aat gag agc tgt gat cct ttg aag aag cca aag cat tac att gac     1538
Ser Asn Glu Ser Cys Asp Pro Leu Lys Lys Pro Lys His Tyr Ile Asp
495                 500                 505                 510

ttt tgc aca ctg aca cag tgc agt taagaggcgt tagaggacaa ggtagcgtgg     1592
Phe Cys Thr Leu Thr Gln Cys Ser
                515

ggaggggctg atacactgag tgcaagagta ctggagggat ccagtgagtc aaaccagtaa   1652
gcagtgaggt gtggcaagga ggtgtgtgta ggggatacat agcaaaggag gtagatcagg   1712
acactaccct gccagttaca ttctgataag gtagttaatg aggcacagta gcatctgaaa   1772
gaccatacag agcactaagg agccccaaag cactattagt atctcttttc ttatatctat   1832
cgcccaaata attttcagag tctggcagaa gccctgttgc actgtactaa ctagatactt   1892
cttatcacaa agattgggaa aggcaaagca gaaagatggt aagactgggt ttcaaacaag   1952
gcttggtttc aatcactgga ggcaaggagg aggggacaaa caagatcatt attcgaagtc   2012
gctggttgct gtggttttac ggaaggttga tgcatcattc ctatcaacag tgaaaagttc   2072
agcttgttca acgtgacaga aaggctcatc tccgtgaaag agctcctgat ttcttcttac   2132
```

```
accatctcag ttcttaacta tagttcatgt tgaggtagaa acaattcatc tatttataaa   2192
atgtacattg gaaaaaaaaa gtgaagttta tgaggtacac ataaaaactg aaggaaacaa   2252
tgagcaacat gcctcctgct ttgcttcctc ctgaggtaaa cctgcctggg gattgaggtt   2312
gtttaagatt atccatggct cacaagaggc agtaaaataa tacatgttgt gccagagtta   2372
gaatggggta tagagatcag ggtcccatga gatggggaac atggtgatca ctcatctcac   2432
atgggaggct gctgcagggt agcaggtcca ctcctggcag ctggtccaac agtcgtatcc   2492
tggtgaatgt ctgttcagct cttctactga gagagaatat gactgtttcc atatgtatat   2552
gtatatagta aaatatgtta ctatgaattg catgtacttt ataagtattg gtgtgtctgt   2612
tccttctaag aaggactata gtttataata aatgcctata ataacatatt tatttttata   2672
catttatttc taatgataaa acctttaagt tatatcgctt ttgtaaaagt gcatataaaa   2732
atagagtatt tatacaatat atgttaacta gaaataataa aagaacactt ttgaatgtgt   2792
atgcctattt tctggagtgg gattaacttc tgggcaagaa atctgatgag acacaaacat   2852
tggacttcaa gacagtttta aattttgggt aaatgaactg tatttcctgt ttatagacgt   2912
actaataaaa aagaagttga tgatgtcttt agtggtaaga ttgttactaa tgtggttggc   2972
aaattgctgt aaagagccag atagtaagca tttatggcat tgtaggctat ctttcctgcc   3032
acaaccatgt gacagtgagt gctttgtagg actgagagca gccataaatg acatgtaaat   3092
gataaactgt ggctgtgctt taataaaact ttatttacaa aaaaaaaaaa aaa          3145
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<210> 10
<211> 518
<212> PRT
<213> Mus musculus.

<400> 10

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Met Val Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu Met Asp
 1               5                  10                  15
Lys Pro Gln Asn Pro Ile Lys Leu Pro Ser Asp Leu Pro Gly Thr Leu
            20                  25                  30
Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Glu Ser Lys
        35                  40                  45
His Cys Pro Asp Ala Ala Ser Thr Cys Thr Thr Leu Trp Cys Thr Gly
    50                  55                  60
Thr Ser Gly Gly Leu Leu Val Cys Gln Thr Lys His Phe Pro Trp Ala
65                  70                  75                  80
Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Val Ser Gly Lys Cys
                85                  90                  95
Val Asn Lys Thr Asp Met Lys His Phe Ala Thr Pro Val His Gly Ser
            100                 105                 110
Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly
        115                 120                 125
Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro Lys Asn
    130                 135                 140
Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser Cys Asn
145                 150                 155                 160
Ile Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu Glu Gln
                165                 170                 175
Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Asn Glu Pro
            180                 185                 190
Thr Val Glu Trp Thr Pro Lys Tyr Ala Gly Val Ser Pro Lys Asp Arg
        195                 200                 205
Cys Lys Leu Thr Cys Glu Ala Lys Gly Ile Gly Tyr Phe Phe Val Leu
    210                 215                 220
Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Thr Ser
225                 230                 235                 240
Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg Ile Ile
                245                 250                 255
Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly Asn Gly
```

```
            260                 265                 270
Ser Thr Cys Lys Lys Met Ser Gly Ile Val Thr Ser Thr Arg Pro Gly
        275                 280                 285
Tyr His Asp Ile Val Thr Ile Pro Ala Gly Ala Thr Asn Ile Glu Val
    290                 295                 300
Lys His Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe Leu Ala
305                 310                 315                 320
Ile Arg Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asn Phe Thr Leu
                325                 330                 335
Ser Thr Leu Glu Gln Asp Leu Thr Tyr Lys Gly Thr Val Leu Arg Tyr
            340                 345                 350
Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser Pro Leu
        355                 360                 365
Lys Glu Pro Leu Thr Ile Gln Val Leu Met Val Gly His Ala Leu Arg
    370                 375                 380
Pro Lys Ile Lys Phe Thr Tyr Phe Met Lys Lys Lys Thr Glu Ser Phe
385                 390                 395                 400
Asn Ala Ile Pro Thr Phe Ser Glu Trp Val Ile Glu Glu Trp Gly Glu
                405                 410                 415
Cys Ser Lys Thr Cys Gly Ser Gly Trp Gln Arg Arg Val Val Gln Cys
            420                 425                 430
Arg Asp Ile Asn Gly His Pro Ala Ser Glu Cys Ala Lys Glu Val Lys
        435                 440                 445
Pro Ala Ser Thr Arg Pro Cys Ala Asp Leu Pro Cys Pro His Trp Gln
    450                 455                 460
Val Gly Asp Trp Ser Pro Cys Ser Lys Thr Cys Gly Lys Gly Tyr Lys
465                 470                 475                 480
Lys Arg Thr Leu Lys Cys Val Ser His Asp Gly Gly Val Leu Ser Asn
                485                 490                 495
Glu Ser Cys Asp Pro Leu Lys Lys Pro Lys His Tyr Ile Asp Phe Cys
            500                 505                 510
Thr Leu Thr Gln Cys Ser
        515
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<210> 11
<211> 1110
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (323)...(1108)

<400> 11

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gcggccgctc ccggccggcc caagggacag agccaggctc cgggagcccg caacactcgt     60
cctgagagcc ccggctcctc agcccgctac ggccagggcc tcggcctccg cccccgactc    120
ccgagctcct gccctagagt cgactgggct cccgcccgcg tgggacagac agacggacag    180
ccagccctgc gagggcgcgc ggaccgggcg gaggtgttgt aggaggagac cgaggagggg    240
ggctgggctg gggctggggc cgcgccggca agagagacat gcgattggtg accaagccga    300
gcggacggac agcgcgcccg ag atg cag gtg agc gag agg atg ctg gca ggg     352
                        Met Gln Val Ser Glu Arg Met Leu Ala Gly
                         1               5                  10

ggt atg aga agc atg ccc agc ccc ctc ctg gcc tgc tgg cag ccc atc      400
Gly Met Arg Ser Met Pro Ser Pro Leu Leu Ala Cys Trp Gln Pro Ile
                15                  20                  25
```

```
ctc ctg ctg gta ctg ggc tca gtg ctg tca ggc tct gct aca ggc tgc      448
Leu Leu Leu Val Leu Gly Ser Val Leu Ser Gly Ser Ala Thr Gly Cys
            30                  35                  40

ccg ccc cgc tgc gag tgc tca gcg cag gac cga gcc gtg ctc tgc cac      496
Pro Pro Arg Cys Glu Cys Ser Ala Gln Asp Arg Ala Val Leu Cys His
        45                  50                  55

cgc aaa cgc ttt gtg gcg gtg ccc gag ggc atc ccc acc gag act cgc      544
Arg Lys Arg Phe Val Ala Val Pro Glu Gly Ile Pro Thr Glu Thr Arg
    60                  65                  70

ctg ctg gac ctg ggc aaa aac cgc atc aag aca ctc aac cag gac gag      592
Leu Leu Asp Leu Gly Lys Asn Arg Ile Lys Thr Leu Asn Gln Asp Glu
75                  80                  85                  90

ttt gcc agc ttc cca cac ctg gag gag cta gaa ctc aat gaa aac atc      640
Phe Ala Ser Phe Pro His Leu Glu Glu Leu Glu Leu Asn Glu Asn Ile
                95                  100                 105

gtg agc gcc gtg gag cca ggc gcc ttc aac aac ctc ttc aac ctg agg      688
Val Ser Ala Val Glu Pro Gly Ala Phe Asn Asn Leu Phe Asn Leu Arg
            110                 115                 120

act ctg ggg ctg cgc agc aac cgc ctg aag ctt atc ccg ctg ggc gtc      736
Thr Leu Gly Leu Arg Ser Asn Arg Leu Lys Leu Ile Pro Leu Gly Val
        125                 130                 135

ttc acc ggc ctc agc aac ttg acc aag ctg gac atc agt gag aac aag      784
Phe Thr Gly Leu Ser Asn Leu Thr Lys Leu Asp Ile Ser Glu Asn Lys
    140                 145                 150

atc gtc atc ctg cta gac tac atg ttc caa gac cta tac aac ctc aag      832
Ile Val Ile Leu Leu Asp Tyr Met Phe Gln Asp Leu Tyr Asn Leu Lys
155                 160                 165                 170

tcg ctg gag gtc ggc gac aac gac ctc gtc tac atc tcc cat cga gcc      880
Ser Leu Glu Val Gly Asp Asn Asp Leu Val Tyr Ile Ser His Arg Ala
                175                 180                 185

ttc agc ggc ctc aac agc ctg gaa cag ctg acg ctg gag aaa tgc aat      928
Phe Ser Gly Leu Asn Ser Leu Glu Gln Leu Thr Leu Glu Lys Cys Asn
            190                 195                 200

ctg acc tcc atc ccc acg gag gcg ctc tcc cac ctg cac ggc ctc atc      976
Leu Thr Ser Ile Pro Thr Glu Ala Leu Ser His Leu His Gly Leu Ile
        205                 210                 215

gtc ctg cgg cta cga cat ctc aac atc aat gcc atc agg gac tac tcc     1024
Val Leu Arg Leu Arg His Leu Asn Ile Asn Ala Ile Arg Asp Tyr Ser
    220                 225                 230

ttc aag agg ctg tac cga ctt aag gtc tta gag atc tcc cac tgg ccc     1072
Phe Lys Arg Leu Tyr Arg Leu Lys Val Leu Glu Ile Ser His Trp Pro
235                 240                 245                 250

tac ctg gac acc ata acc ccc cgg acg cgt ggg tcg ac                  1110
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Tyr Leu Asp Thr Ile Thr Pro Arg Thr Arg Gly Ser
255 260

<210> 12
<211> 262
<212> PRT
<213> Mus musculus

<400> 12
Met Gln Val Ser Glu Arg Met Leu Ala Gly Gly Met Arg Ser Met Pro
1 5 10 15
Ser Pro Leu Leu Ala Cys Trp Gln Pro Ile Leu Leu Leu Val Leu Gly
20 25 30
Ser Val Leu Ser Gly Ser Ala Thr Gly Cys Pro Pro Arg Cys Glu Cys
35 40 45
Ser Ala Gln Asp Arg Ala Val Leu Cys His Arg Lys Arg Phe Val Ala
50 55 60
Val Pro Glu Gly Ile Pro Thr Glu Thr Arg Leu Leu Asp Leu Gly Lys
65 70 75 80
Asn Arg Ile Lys Thr Leu Asn Gln Asp Glu Phe Ala Ser Phe Pro His
85 90 95
Leu Glu Glu Leu Glu Leu Asn Glu Asn Ile Val Ser Ala Val Glu Pro
100 105 110
Gly Ala Phe Asn Asn Leu Phe Asn Leu Arg Thr Leu Gly Leu Arg Ser
115 120 125
Asn Arg Leu Lys Leu Ile Pro Leu Gly Val Phe Thr Gly Leu Ser Asn
130 135 140
Leu Thr Lys Leu Asp Ile Ser Glu Asn Lys Ile Val Ile Leu Leu Asp
145 150 155 160
Tyr Met Phe Gln Asp Leu Tyr Asn Leu Lys Ser Leu Glu Val Gly Asp
165 170 175
Asn Asp Leu Val Tyr Ile Ser His Arg Ala Phe Ser Gly Leu Asn Ser
180 185 190
Leu Glu Gln Leu Thr Leu Glu Lys Cys Asn Leu Thr Ser Ile Pro Thr
195 200 205
Glu Ala Leu Ser His Leu His Gly Leu Ile Val Leu Arg Leu Arg His
210 215 220
Leu Asn Ile Asn Ala Ile Arg Asp Tyr Ser Phe Lys Arg Leu Tyr Arg
225 230 235 240
Leu Lys Val Leu Glu Ile Ser His Trp Pro Tyr Leu Asp Thr Ile Thr
245 250 255
Pro Arg Thr Arg Gly Ser
260

<210> 13
<211> 1027
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (106)...(630)

<400> 13
ctcctggatg tgcgcagccg cagagcgctg ctgctgtgcc taatacccat cgctgcgcac 60
ttgacagcca gtccgcccgt ccggagcccg gctcgttggg gcagc atg gcg ggg tcg 117

```
                                                    Met Ala Gly Ser
                                                     1

ccg ctg ctc tgc ggg ccg cgg gcc ggg ggc gtc ggc att ttg gtg ctg      165
Pro Leu Leu Cys Gly Pro Arg Ala Gly Gly Val Gly Ile Leu Val Leu
 5                  10                  15                  20

ctg ctc ttg ggc ctt ctg agg ctg ccc ccc acc ctg tca gcg agg ccc      213
Leu Leu Leu Gly Leu Leu Arg Leu Pro Pro Thr Leu Ser Ala Arg Pro
                25                  30                  35

gtg aag gag ccc cgc agt ctg agc gca gca tcc gcg ccc ttg gtt gag      261
Val Lys Glu Pro Arg Ser Leu Ser Ala Ala Ser Ala Pro Leu Val Glu
            40                  45                  50

acg agc act ccc ctc cgc ttg cgt cgg gcc gtg ccc cga gga gag gcg      309
Thr Ser Thr Pro Leu Arg Leu Arg Arg Ala Val Pro Arg Gly Glu Ala
        55                  60                  65

gcg ggt gcg gtg cag gag ctg gcg cgg gcg ctg gcg cac ctg ctg gag      357
Ala Gly Ala Val Gln Glu Leu Ala Arg Ala Leu Ala His Leu Leu Glu
    70                  75                  80

gcc gag aga cag gaa cgc gcg cgt gct gag gcg cag gag gct gag gat      405
Ala Glu Arg Gln Glu Arg Ala Arg Ala Glu Ala Gln Glu Ala Glu Asp
 85                  90                  95                  100

cag cag gcg cgt gtc ctg gcg cag ctg ctg cgc gcc tgg ggc tct ccg      453
Gln Gln Ala Arg Val Leu Ala Gln Leu Leu Arg Ala Trp Gly Ser Pro
                105                 110                 115

cgt gcc tcg gac ccg ccc ttg gcc ccc gac gat gac ccg gac gct cca      501
Arg Ala Ser Asp Pro Pro Leu Ala Pro Asp Asp Asp Pro Asp Ala Pro
            120                 125                 130

gct gca cag ctc gcc cgt gct ctg ctc cga gct cgc cta gac ccc ggc      549
Ala Ala Gln Leu Ala Arg Ala Leu Leu Arg Ala Arg Leu Asp Pro Gly
        135                 140                 145

ccc cag tgt atg atg atg gcc cca ctg gcc cag acg tcg agg atg ccg      597
Pro Gln Cys Met Met Met Ala Pro Leu Ala Gln Thr Ser Arg Met Pro
    150                 155                 160

gcg acg aga ctc ctg acg tgg acc ctg agc tgc tgaggtactt gctagggcgg    650
Ala Thr Arg Leu Leu Thr Trp Thr Leu Ser Cys
165                 170                 175

atcctcaccg gaagttcgga gccagaggct gctcctgccc cgcgccgcct ccgccgatct    710
gtggaccagg atttgggtcc cgaggtgccc cctgagaacg tactgggggc tctgctacgc    770
gtcaaacgcc tggagaaccc ctcgccccag gcgccggcac gccgcctcct gcctccctga    830
gcgctgctgc atcctgcacg ccctggaacc caggagcgcc ccagcaaccc tgactccctg    890
ccagcacgtc caaggctgct taccccagca acctcccatc ccctgagccc tcaataaatg    950
ccatctgtag caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa   1010
aaaaaaaaaa aaaaaaa                                                  1027

<210> 14
<211> 175
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<212> PRT
<213> Mus musculus

<400> 14

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Met Ala Gly Ser Pro Leu Leu Cys Gly Pro Arg Ala Gly Gly Val Gly
 1               5                  10                  15
Ile Leu Val Leu Leu Leu Leu Gly Leu Leu Arg Leu Pro Pro Thr Leu
            20                  25                  30
Ser Ala Arg Pro Val Lys Glu Pro Arg Ser Leu Ser Ala Ala Ser Ala
        35                  40                  45
Pro Leu Val Glu Thr Ser Thr Pro Leu Arg Leu Arg Arg Ala Val Pro
    50                  55                  60
Arg Gly Glu Ala Ala Gly Ala Val Gln Glu Leu Ala Arg Ala Leu Ala
65                  70                  75                  80
His Leu Leu Glu Ala Glu Arg Gln Glu Arg Ala Arg Ala Glu Ala Gln
                85                  90                  95
Glu Ala Glu Asp Gln Gln Ala Arg Val Leu Ala Gln Leu Leu Arg Ala
            100                 105                 110
Trp Gly Ser Pro Arg Ala Ser Asp Pro Pro Leu Ala Pro Asp Asp Asp
        115                 120                 125
Pro Asp Ala Pro Ala Ala Gln Leu Ala Arg Ala Leu Leu Arg Ala Arg
    130                 135                 140
Leu Asp Pro Gly Pro Gln Cys Met Met Met Ala Pro Leu Ala Gln Thr
145                 150                 155                 160
Ser Arg Met Pro Ala Thr Arg Leu Leu Thr Trp Thr Leu Ser Cys
                165                 170                 175
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